

REMARKS

In the Office Action, claims 1, 2, 5-10, 15, 16, 18, 24, 25, 31, 32, 38-40, 52-55, 63 and 64 were rejected. Claims 3, 4, 11-14, 19-21, 23, 26-28, 30, 33-35, 37 and 56-58 were objected to, but the Examiner indicated that these claims would be allowable if re-written in independent form including any subject matter of intervening claims. By the present Response, claims 1, 9, 11-13, 15, 18, 25 and 32 are amended, a new claim 65 is added, and claims 10 and 20 are canceled without prejudice. Upon entry of the amendments, claims 1-9, 11-16, 18, 19, 21, 23-28, 30-35, 37-58, 63, 64 and 65 will be pending in the present application. Reconsideration and allowance of all pending claims are requested.

Certain of the claims were rejected in the Office Action as unpatentable over Yaotani et al. In particular, claims 1, 52-55, 63 and 64 were rejected under 35 U.S.C. §102(b) as anticipated by Yaotani et al. The remaining claims were rejected under 35 U.S.C. §103(a) as unpatentable over Yaotani et al. in view of either Hiroyuki, or in view of Thom, or in view of Thom and Hiroyuki. Applicants believe that the pending claims clearly distinguish the invention over all of the cited references, however, and respectfully request their reconsideration.

Claim 1 was rejected as anticipated by Yaotani et al. However, claim 1 specifically recites that the bosses of the claimed thread have lead-in profiles in a direction towards the tip, lead-out profiles in the direction towards the head, and “*a central section of substantially uniform radially dimension.*” This central section is clearly illustrated and described throughout the application. For example, in Figures 2, 3, 4 and 5 it can be seen that the profile of the bosses is generally flat when the lead is represented in a linear (i.e. unwrapped) fashion. That is, the central portion is of a uniform radial dimension. In other words, for analysis purposes, should a compass be placed at a center of the shank, the central portion of the lead would form a circular arc.

In stark contrast to this lead form, the Yaotani et al. reference discloses a screw that has lobes with no uniform radial dimension at all. This configuration is most clearly seen in Yaotani et al. in Figure 3. Each of the lobes or "thread-type projections" 150 of Yaotani et al. are arcuate sections of threads that would not have a center at the center of the shank. This is, indeed, not surprising given the manner in which the thread is formed. In particular, Figures 5 and 6 illustrate the formation of the die or rolling tool, in which a circular cutting tool is plunged into the thread line. The resulting structure provides a generally circulate or arcuate lobe. Indeed, no other shape would be possible. Again, no portion of these lobes has a substantially uniform radial dimension.

Accordingly, Yaotani et al. cannot anticipate the subject matter of claim 1. Claim 1, and the claims depending therefrom, are believed to be clearly patentable over Yaotani et al., then, for at least these reasons. Reconsideration and allowance of these claims are respectfully requested.

The Yaotani et al. reference was also said to have anticipated the subject matter of independent claim 52. Upon carefully consideration, however, it is noted that claim 52, similarly to claim 1, recites, *inter alia*, that the bosses each include "a central section of substantially uniform radial dimension." It is noted that claim 52 also recites specific relationships between insertion torque and removal torque, which cannot be considered mere matters of design choice or intended uses. These ratios are believed to result from the structures of the fastener itself. At any rate, because Yaotani et al. do not teach or suggest the elements recited in claim 52 the reference cannot anticipate that claim or the claims depending therefrom. Accordingly, reconsideration and allowance of claim 52 and its dependent claims are requested.

Independent claim 64 was also rejected as anticipated by Yaotani et al. However, Applicants note that claim 64, like claims 1 and 52, recite that the bosses each include "a central section of substantially uniform radially dimension." Accordingly, for at least this

reason, Yaotani et al. cannot anticipate claim 64. Reconsideration and allowance of this claim are requested.

→ Independent claim 9 was rejected as unpatentable over Yaotani et al. in view of Thom. It is noted that the Thom reference was only cited by the Examiner for its teaching of a double-leaded screw. Claim 9 has been amended by the present response to incorporate subject matter originally recited in claim 10. That is, claim 9 now recites that profiles of at least two bosses of the first lead differ from one another, and profiles of at least two bosses of the second lead differ from one another. The Examiner argued that this subject matter is disclosed in Yaotani et al. However, no indication of bosses of different profiles can be found in Yaotani et al. Indeed, it is believed that no such difference in bosses is possible given the method of manufacture as espoused by Yaotani et al. In particular, through examination of Figures 5 and 6 of Yaotani et al., and the accompanying text, it is clear that the reference contemplates formation of bosses having exactly the same geometry, rather than different geometries. For at least these reasons, the recitations of claims 9 cannot be considered taught by either Yaotani et al. or Thom. Applicants further believe that there is no teaching whatsoever in either reference for the combination proposed by the Examiner. At any rate, given the fact that the recitations discussed above are not contained in either reference, or fairly suggested by either reference, claim 9, and the claims depending therefrom, are clearly patentable over the cited reference. Reconsideration and allowance of these claims are requested.

↳ Independent claim 18 was rejected on the same basis as claim 9. Claim 18 has also been amended to incorporate subject matter originally recited in claim 20. In fact, this subject matter is similar to that incorporated into claim 9 and discussed above. Claim 18 now recites that lead-in profiles of at least two of the bosses of the first and second leads are different from one another. As discussed above, neither Yaotani et al. or Thom teach or fairly suggest such structures. Indeed, given the method of manufacture taught by Yaotani et al., it is believed that such structures cannot be obtained. Claim 18 and the

claims depending therefrom are therefore believed to be clearly patentable over the cited combination and their reconsideration and allowance are requested.

Claim 25 was rejected as unpatentable over Yaotani et al. in view of Thom (although no clear indication of the basis for rejection was formulated initially in Section 5 of the Office Action). By the present Response, claim 25 has been amended to add the recitation that each of the first and second helical leads has a central section of substantially uniform radial dimension. As noted above, Yaotani et al., the only reference cited by the Examiner which could provide such teaching, does not teach or fairly suggest a lead form in which central sections have substantially uniform radially dimensions. As also noted above, it is believed that, given the process of manufacture taught by Yaotani et al., such structures are not even achievable. Accordingly, for at least these reasons, claim 25 and the claims depending therefrom are believed to be clearly patentable over the cited art. Reconsideration and allowance of these claims are requested.

Finally, claim 32 was rejected as unpatentable over Yaotani et al. and Thom (although, again, the rejection is not clear in Section 5 as to the precise basis for the rejection). By the present Response, claim 32 has been amended to add recitations as to the inclusion of a central section of substantially uniform radially dimension in each of the first and second helical leads. As noted above, neither reference teaches this feature, and claims 32 and the claims depending therefrom are therefore believed to be clearly allowable over the cited art. Reconsideration and allowance of these claims are requested.

By the present Response, a new claim 65 has been added. Claim 65 recites subject matter similar to that of claim 1, but adds that the lead-in profile of at least one of the bosses is different from the lead-out profile of the same boss. Claim 65 is believed to be clearly patentable for reasons similar to those set forth above with reference to claim 1. Also, however, the particular distinction between the lead-in profile and lead-out profile

of the bosses is believed to be impossible to obtain given the procedures taught by Yaotani et al. Accordingly, claim 65 is believed to be clearly allowable over the cited art and its consideration and allowance are requested.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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